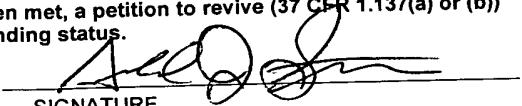


FORM PTO-1390 (Modified) U.S. PATENT AND TRADEMARK OFFICE; U.S. DEPARTMENT OF COMMERCE (REV. 2-2005)		ATTORNEY'S DOCKET NUMBER 873.0132.U1(US)
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371		U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/533248
INTERNATIONAL APPLICATION NO. PCT/US2003/034414	INTERNATIONAL FILING DATE 29 October 2003	PRIORITY DATE CLAIMED 29 October 2002
TITLE OF INVENTION Low Complexity Beamformers for Multiple Transmit and Receive Antennas		
APPLICANT(S) FOR DO/EO/US Krishna Kiran MUKKAVILLI, Ashutosh SABHARWAL, Behnaam AZHANG		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a submission under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.</p> <p>4. <input type="checkbox"/> The US has been elected (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c)(2)) a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). a. <input type="checkbox"/> is attached hereto. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</p> <p>11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</p> <p>12. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</p>		
Items 13 to 23 below concern document(s) or information included:		
<p>13. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>15. <input checked="" type="checkbox"/> A FIRST preliminary amendment.</p> <p>16. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>17. <input type="checkbox"/> A substitute specification.</p> <p>18. <input type="checkbox"/> A power of attorney and/or change of address letter.</p> <p>19. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821 - 1.825.</p> <p>20. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4).</p> <p>21. <input type="checkbox"/> A second copy of the English language translation of the International Application under 35 U.S.C. 154(d)(4).</p> <p>22. <input checked="" type="checkbox"/> Express Mail Label No. EV 734 376 347 US</p> <p>23. <input type="checkbox"/> Other items or information:</p>		

U.S. APPLICATION NO (if known, see 37 CFR 1.5) 10/533248		INTERNATIONAL APPLICATION NO. PCT/US2003/034414		ATTORNEY'S DOCKET NUMBER 873.0132.U1(US)	
				CALCULATIONS PTO USE	
The following fees are submitted:		\$300		\$300.00	
24. <input checked="" type="checkbox"/> Basic national fee		\$300		\$300.00	
25. <input checked="" type="checkbox"/> Examination fee If International preliminary examination report prepared by USPTO and all claims satisfy provisions of PCT Article 33(1)-(4)..... All other situations.....		\$100 \$200		\$100.00	
26. <input checked="" type="checkbox"/> Search fee Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority		\$100		\$100.00	
International Search Report prepared and provided to the Office		\$400		\$400	
All other situations.....		\$500		\$500.00	
TOTAL OF 24, 25 and 26 =				\$500.00	
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.					
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round up to a whole)		RATE	
- 100 =	0 /50 =	0		x \$250.00	\$ 0.00
Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	45 - 20 =	25	x \$50.00	\$	\$1,250.00
Independent claims	12 - 3 =	9	x \$200.00	\$	\$1,800.00
MULTIPLE DEPENDENT CLAIMS (if applicable)		<input type="checkbox"/>	+ \$360.00	\$	\$0.00
		TOTAL OF ABOVE CALCULATIONS =		\$	\$3,550.00
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$	\$0.00
		SUBTOTAL =		\$	\$3,550.00
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	\$0.00
		TOTAL NATIONAL FEE =		\$	\$3,550.00
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property +		\$0.00		\$	\$0.00
		TOTAL FEES ENCLOSED =		\$	\$3,550.00
				Amount to be	\$
				Amount to be	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>\$3,550.00</u> to cover the above fees is enclosed.					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-1924</u> . A duplicate copy of this sheet is enclosed.					
d. <input type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.					
NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.					
SEND ALL CORRESPONDENCE TO: Customer No. 29683 Harrington & Smith, LLP 4 Research Drive Shelton, CT 06484-6212 (203) 925-9400					
 SIGNATURE Gerald J. Stanton NAME <u>46,008</u> REGISTRATION NUMBER					

10/533248

JC14 Rec'd [REDACTED] PTO 29 APR 2005

Express Mail No. EV 734 376 347 US
IN THE U.S. PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of:

Applicant: Mukkavilli et al.

U.S. Serial No.:

International Application No.: PCT/US2003/034414

International Filing Date: 29 October 2003

Title: Low Complexity Beamformers for Multiple Transmit and Receive Antennas

Attorney Docket No.: 873.0132.U1(US)

Certificate of Mailing

I hereby certify that the following correspondence:

Transmittal Letter to U.S. Designated/Elected Office

Preliminary Amendment

WO 2004/040690 A2 published application

Information Disclosure Statement with PTO-1449

International Search Report

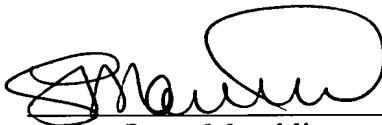
International Preliminary Examination Report

Check for \$ 3550.00

Self addressed stamped post card

Is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, Mail Stop PCT.

Date: April 29, 2005



Lynn Maroldi